PCT/US99/13959

09/701623 529 REP PCT/PTC 01 DEC 2000

	SEQUENCE LISTING
•	(1) GENERAL INFORMATION:
	(i) APPLICANT: UNITED BIOMEDICAL INC., et al.
\	(1) APPLICANT. UNITED DIGINDZEGIE
5	(ii) TITLE OF INVENTION: PEPTIDE COMPOSITION AS IMMUNOGEN FOR THE TREATMENT OF ALLERGY
	(iii) NUMBER OF SEQUENCES: 91
	(iv) CORRESPONDENCE ADDRESS:
10	(A) ADDRESSEE: Morgan & Finnegan
	(B) STREET: 345 Park Avenue
	(C) CITY: New York
	(D) STATE: NY
	(E) COUNTRY: USA ((F) ZIP: 10154-0053
15	(E) ZIE. 10154 0055
	(v) COMPUTER READABLE FORM:
	(A) MEDIUM TYPE: Floppy disk
	(B) COMPUTER: IBM PC compatible
	(C) OPERATING SYSTEM: PC-DOS/MS-DOS
20	(D) SOFTWARE: WORD 8.0
	A CONTRACT A DOLL CARLON DATA
	<pre>(vi) CURRENT APPLICATION DATA: (A) APPLICATION NUMBER. To be assigned</pre>
	(B) FILING DATE: 21-JUNE 1999
	(C) CLASSIFICATION:
25	
	(vii) PRIOR APPLICATION DATA:
	(A) APPLICATION NUMBER: US 09/100,287
	(B) FILING DATE: 20-JUN-1998
20	(C) CLASSIFICATION: 514
30	(viii) ATTORNEY/AGENT INFORMATION:
	(A) NAME: MARIA C.H.LIN
	(B) DEGLEEDARTON NUMBER: 29 323

(C) REFERENCE/DOCKET NUMBER: 1151-4153PC1

•	(i:	(A) TE	LEPH	ONE:	212 22–7	-758	-480		•			
	(2)	INFO	RMAT	ION	FOR	SEQ	ID N	0:1:					
5 .	((A) L B) T	ENGT	H: 3 ami	ACTE 25 a no a lin	mino cid		ds				
10			FEAT	ÜRE:		PE: p		,	hum	ıan I	gE		
15			REFEF	RENCE	E: Do	orrin	ngtor 3, 41	anc	Ber 25.	nich	ı, Im	munol	Rev,
	1				5	Phe Cys				10			
20	Pro		15			Leu		20			_		•
				40		30 Ile			45		Leu		
25	Asp	Gly 50	Gln	Val	Met	Asp	Val 55	Asp	Leu	Ser	Thr	Ala 60	
		Thr			65	Gly				70	-		
30	Ser	Glu	Leu 75	Thr	Leu	Ser	Gln	Lys 80	His	Trp	Leu	Ser	
<i>5</i> 0	85		Thr			Cys 90					95		
		Thr	Phe	Glu 100		Ser	Thr	Lys	Lys 105	Cys	Ala	Asp	•

	Ser	Asn	Pro	Arg	Gly	Val	Ser	Ala	Tyr	Leu	Ser	Arg
0		110					115					120
	Pro	Ser	Pro	Phe	Asp 125	Leu	Phe	Ile	Arg	Lys 130	Ser	Pro
	Thr	Ile	Thr 135	Cys	Leu	Val	Val	Asp 140	Leu	Ala	Pro	Ser
5	Lys 145	Gly	Thr	Val	Asn	Leu 150	Thr	Trp	Ser	Arg	Ala 155	Ser
		Lys	Pro	Val	Asn	His	Ser	Thr	Arg 165	Lys	Glu	Glu
	Lys	Gln 170	Arg	Asn	Gly	Thr	Leu 175	Thr	Val	Thr	Ser	Thr 180
10	Leu	Pro	Val	Gly	Thr 185	Arg	Asp	Trp	Ile	Glu 190	Gly	Glu
	Thr	Tyr	Gln 195	Cys	Arg	Val	Thr	His 200	Pro	His	Leu	Pro
	Arg 205			Met	Arg	Ser 210		Thr	Lys	Thr	Ser 215	Gly
15			Ala	Ala 220		Glu	Val	Tyr	Ala 225		Ala	Thr
	Pro	Glu 230	Trp	Pro	Gly	Ser	Arg 235		Lys	Arg	Thr	Leu 240
20					245					250		Ile
20	Ser	Val	Gln 255		Leu	His	Asn	Glu 260		Gln	Leu	Pro
	Asp 265		Arg	His	Ser	Thr 270		Gln	Pro	Arg	Lys 275	Thr
25	Lys	Gly	Ser	Gly 280		Phe	Val	Phe	Ser 285		Leu	Glu
	Val	Thr 290		Ala	Glu	Trp	Gln 295		Lys	Asp	Glu	Phe 300
	Ile			Ala	Val 305		Glu	Ala	Ala	Ser 310		Ser
30	Gln	Thr	Val 315		Arg	Ala	Val	Ser 320		Asn	Pro	Gly
	Lys	3										
÷	325											
35	(2)	INF	ORMA	TION	FOR	SEÇ	ID	NO:2	2:			

•		(i)	(A) (B)		TH: C: am	312 nino	amin acid					
5		(ii)	MOI	ECUI	E TY	PE:	prot	ein	-			
	•	(ix)	FEA (A)			CY: î	cha	in c	of do	g Ig	E	
10		(x)	REFE	ERENC				al., 282-			renet	ics
		(xi)	SEÇ	QUENC	CE DE	ESCRI	PTIC	N: S	EQ I	D NC):2:	
	Ala 1	Cys	Ala	Leu	Asn 5	Phe	Ile	Pro	Pro	Thr 10	Val	Lys
15	Leu	Phe	His 15	Ser	Ser	Cys	Asn	Pro 20	Val	Gly	Asp	Thr
	His 25	Thr	Thr	Ile	Gln	Leu 30	Leu	Cys	Leu	Ile	Ser 35	Gly
20	Tyr	Val	Pro	Gly 40	Asp	Met	Glu	Val	Ile 45	Trp	Leu	Val
20	Asp	Gly 50	Gln	Lys	Ala	Thr	Asn 55	Ile	Phe	Pro	Tyr	Thr 60
	Ala	Pro	Gly	Thr	Lys 65	Glu	Gly	Asn	Val	Thr 70	Ser	Thr
25	His	Ser	Glu 75	Leu	Asn	Ile	Thr	Gln 80	Gly	Glu	Trp	Val
	Ser 85	Gln	Lys	Thr	Tyr	Thr 90	Cys	Gln	Gly	Phe	Thr 95	Phe
	Lys	Asp	Glu	Ala 100	Arg	Lys	Cys	Ser	Glu 105	Ser	Asp	Pro
30	Arg	Gly 110	Val	Thr	Ser	Tyr	Leu 115	Ser	Pro	Pro	Ser	Pro 120
	Leu		Leu	Tyr	Val 125	His	Lys	Ala	Pro	Lys 130	Ile	Thr
25	Cys	Leu	Val 135	Val		Leu	Ala	Thr 140	Met	Glu	Gly	Met
35												

	Asn	Leu	Thr	Trp	Tyr	Arg	Glu	Ser	Lys	Glu	Pro	Val
•	145					150					155	
	Asn	Pro	Gly	Pro 160	Leu	Asn	Lys	Lys	Asp	His 165	Phe	Asn
	Gly	Thr 170	Ile	Thr	Val	Thr	Ser 175	Thr	Leu	Pro	Val	Asn 180
5	Thr	Asn	Asp	Trp	Ile 185	Glu	Gly	Glu	Thr	Tyr 190	Tyr	Суѕ
٠	Arg	Val	Thr 195	His	Pro	His	Leu	Pro 200	Lys	Asp	Ile	Val
	Arg 205	Ser	Ile	Ala	Lys	Ala 210	Pro	Gly	Lys	Arg	Ala 215	Pro
10	Pro	Asp	Val	Tyr 220	Leu	Phe	Leu	Pro	Pro 225	Glu	Glu	Glu
	Gln	Gly 230	Thr	Lys	Asp	Arg	Val 235	Thr	Leu	Thr	Cys	Leu 240
	Ile	Gln	Asn	Phe	Phe 245	Pro	Ala	Asp	Ile	Ser 250	Val	Gln
15								-				
			255					260			Asp	
	Tyr 265	Thr	Thr	Thr	Gly	Pro 270	His	Lys	Val	Ser	Gly .275	Ser
20	Arg	Pro	Ala	Phe 280	Phe	Ile	Phe	Ser	Arg 285	Leu	Glu	Val
	Ser	Arg 290	Val	Asp	Trp	Glu	Gln 295	Lys	Asn	Lys	Phe	Thr 300
	Cys	Gln	Val	Val	His 305	Glu	Ala	Leu	Ser	Gly 310	Ser	Arg
25												

(2) INFORMATION FOR SEQ ID NO:3:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 313 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(ix) FEATURE:

- (A) NAME/KEY: î chain of rat IgE
- (x) REFERENCE: Steen et al., J Mol Biol, 1984; 177:19-32.
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:3:

5		(XI)	SEQ	JENCI	s De.	SCKI	110	N. 51	5Q 11			
	Ala 1	Arg	Pro	Val	Asn 5	Ile	Thr	Lys	Pro	Thr 10	Val	Asp
	Leu	Leu	His 15	Ser	Ser	Суѕ	Asp	Pro 20	Asn	Ala	Phe	His
10	Ser 25	Thr	Ile	Gln	Leu	Tyr 30	Cys	Phe	Val	Tyr	Gly 35	His
	Ile	Gl'n	Asn	Asp 40	Val	Ser	Ile	His	Trp 45	Leu	Met	Asp
	Asp	Arg 50	Ļys	Ile	Tyr	Asp	Thr 55	His	Ala	Gln	Asn	Val 60
15	Leu	Ile	Lys	Glu	Glu 65	Gly	Lys	Leu	Ala	Ser 70	Thr	Tyr
•	Ser	Arg	Leu 75	Asn	Ile	Thr	Gln	Gln 80	Gln	Trp	Met	Ser
20	Glu 85	Ser	Thr	Phe	Thr	Cys 90	Lys	Val	Thr	Ser	Gln 95	Gly
20	Glu	Asn	Tyr	Trp 100	Ala	His	Thr	Arg	Arg 105	Cys	Ser	Asp
	Asp	Glu 110	Pro	Arg	Gly	Val	Ile 115	Thr	Tyr	Leu	Ile	Pro 120
25	Pro	Ser	Pro	Leu	Asp 125	Leu	Tyr	Glu	Asn	Gly 130	Thr	Pro
	Lys	Leu	Thr 135	Cys	Leu	Val	Leu	Asp 140	Leu	Glu	Ser	Glu
	Glu 145	Asn	Ile	Thr	Val	Thr 150	Trp	Val	Arg	Glu	Arg 155	Lys
30		Ser	Ile	Gly 160	Ser	Ala	Ser	Gln	Arg 165	Ser	Thr	Lys
	His	His 170	Asn		Thr	Thr	Ser 175	Ile	Thr	Ser	Ile	Leu 180

Pro Val Asp Ala Lys Asp Trp Ile Glu Gly Glu Gly

185

	Tyr	Gln	Cys 195	Arg	Val	Asp	His	Pro 200	His	Phe	Pro	Lys
•	Pro 205	Ile	Val	Arg	Ser	Ile 210	Thr	Lys	Ala	Leu	Gly 215	Leu
		Ser	Ala	Pro 220	Glu	Val	Tyr	Val	Phe 225	Leu	Pro	Pro
5	Glu	Glu 230	Glu	Glu	Lys	Asn	Lys 235	Arg	Thr	Leu	Thr	Cys 240
	Leu	Ile	Gln	Asn	Phe 245	Phe	Pro	Glu	Asp	Ile 250	Ser	Val
	Gln	Trp	Leu 255	Gln	Asp	Ser	Lys	Leu 260	Ile	Pro	Lys	Ser
10	Gln 265	His	Ser	Thr	Thr	Thr 270	Pro	Leu	Lys	Thr	Asn 275	Gly
		Asn	Gln	Arg 280	Phe	Phe	Ile	Phe	Ser 285	Arg	Leu	Glu
	Val	Thr 290	Lys	Ala	Leu	Trp	Thr 295	Gln	Thr	Lys	Gln	Phe 300
15	Thr	Cys	Arg	Val	Ile 305	His,	Glu	Ala	Leu	Arg 310	Glu	Pro
	Arg											

(2) INFORMATION FOR SEQ ID NO:4:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 313 amino acids
 - (B) TYPE: amino acid
 - (D) TOPOLOGY: linear
- 25 (ii) MOLECULE TYPE: protein
 - (ix) FEATURE:
 - (A) NAME/KEY: î chain of mouse IgE
- 30 (x) REFERENCE: Ishida et al., EMBO, 1982; 1:1117-1123
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO:4:

	Va.	l Arg	Pro	Val		His	Ser	Leu	Ser		Pro	Trp
0		l			5					10		
	Se	r Tyr	Ser 15	Ile	His	Arg	Cys	Asp 20	Pro	Asn	Ala	Phe
	Hi:	s Ser	Thr	Ile	Gln	Leu 30	Tyr	Суѕ	Phe	Ile	Tyr 35	Gly
5		s Ile	Leu	Asn 40	Asp	Val	Ser	Val	Ser 45	Trp	Leu	Met
	Asj	Asp 50	Arg		Ile	Thr	Asp 55	Thr	Leu	Ala	Gln	Thr 60
	Va	l Leu	Ile	Lys	Glu 65	Glu	Gly	Lys	Leu	Ala 70	Ser	Thr
10	Су	s Ser	Lys 75	Leu		Ile	Thr	Glu 80	Gln	Gln	Trp	Met
	Se:	r Glu 5		Thr	Phe	Thr 90	Cys	Arg	Val	Thr	Ser 95	Gln
		y Cys	Asp	Tyr 100	Leu	Ala	His	Thr	Arg 105	Arg	Cys	Pro
15	As	His 110	Glu	Pro	Arg	Gly	Ala 115	Ile	Thr	Tyr	Leu	Île 120
	Pr	o Pro	Ser	Pro	Leu 125	Asp	Leu	Tyr	Gln	Asn 130	Gly	Ala
20	Pr	o Lys	Leu 135	Thr	Cys	Leu	Val	Val 140	Asp	Leu	Glu	Ser
20	G1: 14	u Lys 5	Asn	Val	Asn	Val 150	Thr	Trp	Asn	Gln	Glu 155	Lys
	Ly	s Thr	Ser	Val 160	Ser	Ala	Ser	Gln	Trp 165	Tyr	Thr	Lys
25	Hi	s His 170	Asn	Asn	Ala	Thr	Thr 175	Ser	Ile	Thr	Ser	Ile 180
	Le	u Pro	Val	Val	Ala 185	Lys	Asp	Trp	Ile	Glu 190	Gly	Tyr
	Gl	y Tyr	Gln 195	Cys	Ile	Val	Asp	Arg 200	Pro	Asp	Phe	Pro
30	Ly 20	s Pro 5	Ile	Val	Arg	Ser 210	Ile	Thr	Lys	Thr	Pro 215	Gly
	Gl	n Arg	Ser	Ala 220	Pro	Glu	Val	Tyr	Val 225	Phe	Pro	Pro
	Pr	o Glu 230		Glu	Ser	Glu	Asp 235	Lys	Arg	Thr	Leu	Thr 240
35												

	Cys	Leu	Ile	Gln	Asn 245	Phe	Phe	Pro	Glu	Asp 250	Ile	Ser
•			255					260			Ser	
	Ser 265	Gln	His	Ser	Thr	Thr 270	Thr	Pro	Leu	Lys	Ser 275	Asn
5	Gly	Asn	Gln	Gly 280	Phe	Phe	Ile	Phe	Ser 285	Arg	Leu	Glu
	Val		Lys	Thr	Leu	Trp	Thr 295	Gln	Arg	Lys	Gln	Phe 300
	Thr	Cys	Gln	Val	Ile 305	His	Glu	Ala	Leu	Gln 310	Lys	Pro
10	Arg											
	(2)	INF	ORMA'	rion	FOR	SEQ	ID 1	NO:5	:			
		(i)			E CHA							
15			(B)	TYP	E: ar	mino	aci	d	240			
		(ii) MO	LECU:	LE T	YPE:	pep	tide				
20		(xi) SE	QUEN	CE D	ESCR:	IPTI	ON:	SEQ	ID N	0:5:	
	Cys 1	Gly	Glu	Thr	Tyr 5	Gln	Ser	Arg	Val	Thr	His	Pro
25	_	Leu	Pro 15	Arg	Ala	Leu	Met	Arg 20	Ser	Thr	Thr	Lys
	Cys 25										•	
		7 L I F	00147	m t O V	FOR	ce0	T D	NO• 6	•			
30	(2)	TNF.	OKMA	TTON	FOR	⊃£Ų	ΙD	140.0	•			

(i) SEQUENCE CHARACTERISTICS:

(B) TYPE: amino acid(D) TOPOLOGY: linear

(A) LENGTH: 25 amino acids

```
(ii) MOLECULE TYPE: peptide
             (xi) SEQUENCE DESCRIPTION: SEQ ID NO:6:
         Cys Gly Glu Thr Tyr Tyr Ser Arg Val Thr His Pro
                                               10
         His Leu Pro Lys Asp Ile Val Arg Ser Ile Ala Lys
5
                                       20
                  15
         Cys
          25
         (2) INFORMATION FOR SEQ ID NO:7:
10
             (i) SEQUENCE CHARACTERISTICS:
                 (A) LENGTH: 25 amino acids
                 (B) TYPE: amino acid
                 (D) TOPOLOGY: linear
15
             (ii) MOLECULE TYPE: peptide
             (xi) SEQUENCE DESCRIPTION: SEQ ID NO:7:
         Cys Gly Glu Gly Tyr Gln Ser Arg Val Asp His Pro
20
                                               10
                           5
         His Phe Pro Lys Pro Ile Val Arg Ser Ile Thr Lys
                 15
                                       20
         Cys
          25
25
         (2) INFORMATION FOR SEQ ID NO:8:
             (i) SEQUENCE CHARACTERISTICS:
                 (A) LENGTH: 25 amino acids
                 (B) TYPE: amino acid
30
                 (D) TOPOLOGY: linear
             (ii) MOLECULE TYPE: peptide
             (xi) SEQUENCE DESCRIPTION: SEQ ID NO:8:
```

•	Cys Gly Tyr Gly Tyr Gln Ser Ile Val Asp Arg Pro 1 5 10
	Asp Phe Pro Lys Pro Ile Val Arg Ser Ile Thr Leu 15 20
	Cys 25
5	
	(2) INFORMATION FOR SEQ ID NO:9:
10	(i) SEQUENCE CHARACTERISTICS:(A) LENGTH: 18 amino acids(B) TYPE: amino acid
	(D) TOPOLOGY: linear
	(ii) MOLECULE TYPE: peptide
15	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:9:
	Lys Lys Lys Ile Ile Thr Ile Thr Arg Ile Ile Thr 1 5 10
20	Ile Ile Thr Thr Ile Asp 15
·	(2) INFORMATION FOR SEQ ID NO:10:
25	(i) SEQUENCE CHARACTERISTICS:(A) LENGTH: 15 amino acids(B) TYPE: amino acid
,	(D) TOPOLOGY: linear
	(ii) MOLECULE TYPE: peptide
30	<pre>(ix) FEATURE: (A) NAME/KEY: Modified-site (B) LOCATION: 1</pre>

0		(D) OTHER INFORMATION: /note= "Ile, Met or Leu"
	(ix)	FEATURE:
-	(14,	(A) NAME/KEY: Modified-site
		(B) LOCATION: 2
		(D) OTHER INFORMATION: /note= "Ser or Thr"
5		
	(ix)	FEATURE:
		(A) NAME/KEY: Modified-site
		(B) LOCATION: 5
		(D) OTHER INFORMATION: /note= "Lys or Arg"
10	(ix)	FEATURE:
	(===/	(A) NAME/KEY: Modified-site
		(B) LOCATION: 6
		(D) OTHER INFORMATION: /note= "Gly or Thr"
15	(ix)	FEATURE:
		(A) NAME/KEY: Modified-site
		<pre>(B) LOCATION: 10 (D) OTHER INFORMATION: /note= "His or Thr"</pre>
		(D) OTHER INFORMATION: / HOLE - HIS OF THE
20	(ix)	FEATURE:
20		(A) NAME/KEY: Modified-site
		(B) LOCATION: 11
		(D) OTHER INFORMATION: /note= "Lys or Arg"
	(i \	FEATURE:
25	(IX)	(A) NAME/KEY: Modified-site
		(B) LOCATION: 12
		(D) OTHER INFORMATION: /note= "Ile, Met or Leu'
	(ix)	FEATURE:
30		(A) NAME/KEY: Modified-site
		(B) LOCATION: 14
		(D) OTHER INFORMATION: /note= "Gly or Thr"
	(iv)	FEATURE:
	(14)	(A) NAME/KEY: Modified-site

	(B) LOCATION: 15
•	(D) OTHER INFORMATION: /note= "Ile, Met or Val"
	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:10:
	Xaa Xaa Glu Ile Xaa Xaa Val Ile Val Xaa Xaa Xaa 1 5 10
5	Glu Xaa Xaa 15
	(2) INFORMATION FOR SEQ ID NO:11:
10	(i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 19 amino acids
. •	(B) TYPE: amino acid (D) TOPOLOGY: linear
15	(ii) MOLECULE TYPE: peptide
	<pre>(ix) FEATURE: (A) NAME/KEY: Modified-site (B) LOCATION: 3 (D) OTHER INFORMATION: /note= "Ile, Met or Leu"</pre>
20	(ix) FEATURE: (A) NAME/KEY: Modified-site (B) LOCATION: 4
25	(D) OTHER INFORMATION: /note= "Ser or Thr"
	<pre>(ix) FEATURE: (A) NAME/KEY: Modified-site (B) LOCATION: 7 (D) OTHER INFORMATION: /note= "Lys or Arg"</pre>
30	<pre>(ix) FEATURE: (A) NAME/KEY: Modified-site (B) LOCATION: 8 (D) OTHER INFORMATION: /note= "Gly or Thr"</pre>

	(ix)	FEATURE:
٥		(A) NAME/KEY: Modified-site
		(B) LOCATION: 12
		(D) OTHER INFORMATION: /note= "His or Thr"
		FEATURE:
_		(A) NAME/KEY: Modified-site
5		(B) LOCATION: 13
		(D) OTHER INFORMATION: /note= "Lys or Arg"
	(ix) 1	FEATURE:
		(A) NAME/KEY: Modified-site
10		(B) LOCATION: 14
10	,	(D) OTHER INFORMATION: /note= "Ile, Met or Leu"
	· · · · · · · · · · · · · · · · · · ·	FEATURE:
15	•	(A) NAME/KEY: Modified-site
13		(B) LOCATION: 16 (D) OTHER INFORMATION: /note= "Gly Or Thr"
	·	(D) OTHER INFORMATION: /Note- Gry Of The
	(ix)	FEATURE:
		(A) NAME/KEY: Modified-site
20		(B) LOCATION: 17
		(D) OTHER INFORMATION: /note= "Ile, Met or Val"
	(xi) S	SEQUENCE DESCRIPTION: SEQ ID NO:11:
	Tle Ser Xa	aa Xaa Glu Ile Xaa Xaa Val Ile Val Xaa
25	1	5 . 10
	Xaa Xaa G	lu Xaa Xaa Leu Phe
•		15
••	(2) INFORM	MATION FOR SEQ ID NO:12:
30	/i\ ct	FOURNCE CHARACTERISTICS.
		EQUENCE CHARACTERISTICS:) LENGTH: 12 amino acids
	i i	TYPE: amino acid
	· v ·	TOPOLOGY: linear
	(0)	, ,,

	(ii) MOLECULE TYPE: peptide
0	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:12:
	Thr Ile Asn Lys Pro Lys Gly Tyr Val Gly Lys Glu 1 5 10
5	(2) INFORMATION FOR SEQ ID NO:13:
10	(i) SEQUENCE CHARACTERISTICS:(A) LENGTH: 16 amino acids(B) TYPE: amino acid(D) TOPOLOGY: linear
	(ii) MOLECULE TYPE: peptide
15	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:13: Thr Ala Lys Ser Lys Lys Phe Pro Ser Tyr Thr Ala
	1 5 10 Thr Tyr Gln Phe
20	15
	(2) INFORMATION FOR SEQ ID NO:14:
25	(i) SEQUENCE CHARACTERISTICS:(A) LENGTH: 45 amino acids(B) TYPE: amino acid(D) TOPOLOGY: linear
,	(ii) MOLECULE TYPE: peptide
30	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:14:
	Lys Lys Ile Ile Thr Ile Thr Arg Ile Ile Thr 1 5 10
35	Ile Ile Thr Thr Ile Asp Gly Gly Cys Gly Glu Thr 15 20

•	25	Gln Leu				30				Leu	Pro 35	Arg
	-			40					45			
5	(2)	INFO										
		(i)	(A) (B)		STH: E: an	63 a	acio					
10		•		LECUI								
		(xi)	SE	QUENC	CE DE	ESCRI	PTIC	ON: S	SEQ I	ED NO):15:	:
15	Thr 1	Ala	Lys	Ser	Lys 5	Lys	Phe	Pro	Ser	Tyr 10	Thr	Ala
-	Thr	Tyr	Gln 15	Phe	Gly	Gly	Lys	Lys 20	Ľys	Ile	Ile	Thr
20	Ile 25	Thr	Arg	Ile	Ile	Thr 30	Ile	Ile	Thr	Thr	Ile 35	Asp
20	Gly	Gly	Cys	Gly 40	Glu	Thr	Tyr	Gln	Ser 45	Arg	Val	Thr
	His	Pro 50	His	Leu	Pro	Arg	Ala 55	Leu	Met	Arg	Ser	Thr 60
25	Thr	Lys	Cys				~					
	(2)	INF	ORMA'	rion	FOR	SEQ	ID 1	NO:1	6:			
30		(i)	(A) (B)		GTH: E: ar	6 an	mino acio					

(ii) MOLECULE TYPE: peptide

```
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:16:
        Pro Pro Xaa Pro Xaa Pro
          1
         (2) INFORMATION FOR SEQ ID NO:17:
5
            (i) SEQUENCE CHARACTERISTICS:
                (A) LENGTH: 59 amino acids
                 (B) TYPE: amino acid
                 (D) TOPOLOGY: linear
10
            (ii) MOLECULE TYPE: peptide
            (xi) SEQUENCE DESCRIPTION: SEQ ID NO:17:
        Thr Ile Asn Lys Pro Lys Gly Tyr Val Gly Lys Glu
15
                           5
          1
         Gly Gly Lys Lys Ile Ile Thr Ile Thr Arg Ile
                  15
         Ile Thr Ile Ile Thr Thr Ile Asp Gly Gly Cys Gly
                              30
         25
         Glu Thr Tyr Gln Ser Arg Val Thr His Pro His Leu
20
                                           45
         Pro Arg Ala Leu Met Arg Ser Thr Thr Lys Cys
                                  55
              50
         (2) INFORMATION FOR SEQ ID NO:18:
25
             (i) SEQUENCE CHARACTERISTICS:
                 (A) LENGTH: 46 amino acids
                 (B) TYPE: amino acid
                 (D) TOPOLOGY: linear
30
             (ii) MOLECULE TYPE: peptide
             (ix) FEATURE:
                  (A) NAME/KEY: Modified-site
```

(B) LOCATION: 4

			(D)	отн	ER :	INFOR	ITAM	ON:	/not	e= '	'Ser	or	Thr"
•	-	(ix)	(A) (B)	LOC	E/KI ATIO	EY: M ON: 7 INFOR					'Lys	or	Arg"
5		(ix)	(A) (B)	LOC	E/KI ATI	EY: M ON: 8 INFOR					"Gly	Or	Thr"
10		(ix)	(A) (B)	LOC	E/KI	EY: M ON: 1 INFOR	.2				"His	Or	Thr"
15		(ix)	(A) (B)	LOC	E/K	EY: M ON: 1 INFOR	.3				"Lys	or	Arg"
20		(ix)	(A) (B)	LOC	E/K	EY: M ON: 1 INFOF	6				" Gly	Or	Thr"
25	Ile 1					ESCR1 Ile							a .
	Xaa	Ile	Glu 15	Xaa	Ile	Leu	Phe	Gly 20	Gly	Cys	Gly	Gl	u
30	25					Val 30 Ser					35		0
25	(2)	INFO	ORMAI	NOI	FOR	SEQ	ID I	NO:1	9:				*

٥	(i)				TERISTI				
					amino a	clas			
			TYPE: a						
		(D) :	ropolo(GY: 1	inear				
5	(ii)	MOL	ECULE :	TYPE:	peptid	le		٠	
,	/iv\	FEA:	יווסב.						
	(IX)			KEY.	Modifie	d-site			
			LOCAT						
						: /note=	"Ser	or	Thr"
10		(2)	0 2 3 3 2 3 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5						
10	(ix)	FEAT	TURE:			•			
		(A)	NAME/	KEY:	Modifie	d-site			
		(B)	LOCAT	ION:	24				
		(D)	OTHER	INFO	ORMATION	: /note=	"Lys	or	Arg"
15	(iv)	FF D'	TURE:						
	(17)			KEY:	Modifie	d-site			
			LOCAT						
,						: /note=	"Gly	Or	Thr"
	(i v)	FFA	TURE:						
20	(IX)			KEY.	Modifie	d-site			
			LOCAT						
						1: /note=	"His	Or	Thr"
	(=)	CCA	mii D.E.						
25	(1X)		TURE:	rev.	Modifie	d-site			
			LOCAT			d Sice			
						J: /note=	"Lys	or	Arg"
			mun D						
	(1X)		TURE:	vev.	Modifie	od-site			
30		•				ed-Sice			
			LOCAT			1: /note=	"Glv	Or	Thr"
		(D)	OIRER	TIME	OKUMITON	. , 11000	- -y	-	
	(xi) S	SEOUE	NCE DE	SCRI	PTION: S	SEQ ID NO	:19:		

	Lys	Ser	Lys 5	Lys	Phe	Pro	Ser	Tyr 10	Thr	Ala	1
_	Phe	Gly	Gly	Ile	Ser	Ile 20	Xaa	Glu	Ile	Xaa	1
	Ile	Val	Xaa	Xaa 30	Ile	Glu	Xaa	Ile	Leu 35	Phe	:
Gly Gly	Cys	Gly 40	Glu	Thr	Tyr	Gln	Ser 45	Arg	Val	Thr	:
		Leu	Pro	Arg	Ala 55	Leu	Met	Arg	Ser	Thr 60	
Thr Lys	cys										
(2) INE	FORMAT	'ION	FOR	SEQ	ID I	NO:2	0:				
(i)											
	-										
(ii)	MOLE	CULI	E TY	PE:	pept	ide					
(ix)	FEAT	TURE	:								
	(A)	NAM	E/KE	Y: M	odif	ied-	site				
	(D)	OTH	ER I	NFOR	MATI	ON:	/not	e= "	Ser	or '	Thr"
(ix				•							
	(A)	NAM	E/KE	Y: M	odif	ied-	site				
						•					
	(D)	OTH:	ER I	NFOR	ITAM	ON:	/not	e= "	Lys	or.	Arg"
(ix) FEAT	TURE	:					•			
•				Y: M	odif	ied-	site				
	• •										
	(D)	отн	ER I	NFOR	MATI	ON:	/not	e= "	Gly	or	Thr"
(ix) FEA	TURE	:							٠	
	(A)	NAM	E/KE	Y: M	lodif	ied-	site	:			
	Thr Gln Xaa Val 25 Gly Gly His Pro 50 Thr Lys (2) INF (ii) (ix)	1 Thr Gln Phe	Thr Gln Phe Gly 15 Xaa Val Ile Val 25 Gly Gly Cys Gly 40 His Pro His Leu 50 Thr Lys Cys (2) INFORMATION (i) SEQUENCE (A) LENG (B) TYPE (D) TOPO (ii) MOLECULI (ix) FEATURE (A) NAM (B) LOC (D) OTH (ix) FEATURE	Thr Gln Phe Gly Gly 15 Xaa Val Ile Val Xaa 25 Gly Gly Cys Gly Glu 40 His Pro His Leu Pro 50 Thr Lys Cys (2) INFORMATION FOR (i) SEQUENCE CHA (A) LENGTH: (B) TYPE: am (D) TOPOLOGY (ii) MOLECULE TY (ix) FEATURE: (A) NAME/KE (B) LOCATIO (D) OTHER I (ix) FEATURE: (A) NAME/KE (B) LOCATIO (D) OTHER I (ix) FEATURE: (A) NAME/KE (B) LOCATIO (D) OTHER I (ix) FEATURE: (A) NAME/KE (B) LOCATIO (D) OTHER I	Thr Gln Phe Gly Gly Ile 15 Xaa Val Ile Val Xaa Xaa 25 30 Gly Gly Cys Gly Glu Thr 40 His Pro His Leu Pro Arg 50 Thr Lys Cys (2) INFORMATION FOR SEQ (i) SEQUENCE CHARACTI (A) LENGTH: 60 and (B) TYPE: amino (D) TOPOLOGY: li: (ii) MOLECULE TYPE: (ix) FEATURE: (A) NAME/KEY: M (B) LOCATION: 1 (D) OTHER INFORM (ix) FEATURE: (A) NAME/KEY: M (B) LOCATION: 2 (D) OTHER INFORM (ix) FEATURE: (A) NAME/KEY: M (B) LOCATION: 2 (D) OTHER INFORM (ix) FEATURE: (A) NAME/KEY: M (B) LOCATION: 2 (D) OTHER INFORM	Thr Gln Phe Gly Gly Ile Ser 15 Xaa Val Ile Val Xaa Xaa Ile 25 30 Gly Gly Cys Gly Glu Thr Tyr 40 His Pro His Leu Pro Arg Ala 50 55 Thr Lys Cys (2) INFORMATION FOR SEQ ID II (i) SEQUENCE CHARACTERISM (A) LENGTH: 60 amino (B) TYPE: amino acid (D) TOPOLOGY: linear (ii) MOLECULE TYPE: pept (ix) FEATURE: (A) NAME/KEY: Modif (B) LOCATION: 18 (D) OTHER INFORMATI (ix) FEATURE: (A) NAME/KEY: Modif (B) LOCATION: 21 (D) OTHER INFORMATI (ix) FEATURE: (A) NAME/KEY: Modif (B) LOCATION: 21 (D) OTHER INFORMATI (ix) FEATURE: (A) NAME/KEY: Modif (B) LOCATION: 22 (D) OTHER INFORMATI (ix) FEATURE: (A) NAME/KEY: Modif (B) LOCATION: 22 (D) OTHER INFORMATI	Thr Gln Phe Gly Gly Ile Ser Ile 15 20 Xaa Val Ile Val Xaa Xaa Ile Glu 25 30 Gly Gly Cys Gly Glu Thr Tyr Gln 40 His Pro His Leu Pro Arg Ala Leu 50 55 Thr Lys Cys (2) INFORMATION FOR SEQ ID NO:20 (i) SEQUENCE CHARACTERISTICS (A) LENGTH: 60 amino acid (B) TYPE: amino acid (D) TOPOLOGY: linear (ii) MOLECULE TYPE: peptide (ix) FEATURE: (A) NAME/KEY: Modified- (B) LOCATION: 18 (D) OTHER INFORMATION: (ix) FEATURE: (A) NAME/KEY: Modified- (B) LOCATION: 21 (D) OTHER INFORMATION: (ix) FEATURE: (A) NAME/KEY: Modified- (B) LOCATION: 21 (D) OTHER INFORMATION: (ix) FEATURE: (A) NAME/KEY: Modified- (B) LOCATION: 22 (D) OTHER INFORMATION:	Thr Gln Phe Gly Gly Ile Ser Ile Xaa 15 20 Xaa Val Ile Val Xaa Xaa Ile Glu Xaa 25 30 Gly Gly Cys Gly Glu Thr Tyr Gln Ser 40 45 His Pro His Leu Pro Arg Ala Leu Met 50 55 Thr Lys Cys (2) INFORMATION FOR SEQ ID NO:20: (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 60 amino acids (B) TYPE: amino acid (D) TOPOLOGY: linear (ii) MOLECULE TYPE: peptide (ix) FEATURE: (A) NAME/KEY: Modified-site (B) LOCATION: 18 (D) OTHER INFORMATION: /not (ix) FEATURE: (A) NAME/KEY: Modified-site (B) LOCATION: 21 (D) OTHER INFORMATION: /not (ix) FEATURE: (A) NAME/KEY: Modified-site (B) LOCATION: 21 (D) OTHER INFORMATION: /not	Thr Gln Phe Gly Gly Ile Ser Ile Xaa Glu 15 Xaa Val Ile Val Xaa Xaa Ile Glu Xaa Ile 25 Gly Gly Cys Gly Glu Thr Tyr Gln Ser Arg 40 His Pro His Leu Pro Arg Ala Leu Met Arg 50 Thr Lys Cys (2) INFORMATION FOR SEQ ID NO:20: (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 60 amino acids (B) TyPE: amino acid (D) TOPOLOGY: linear (ii) MOLECULE TYPE: peptide (ix) FEATURE: (A) NAME/KEY: Modified-site (B) LOCATION: 18 (D) OTHER INFORMATION: /note= " (ix) FEATURE: (A) NAME/KEY: Modified-site (B) LOCATION: 21 (D) OTHER INFORMATION: /note= " (ix) FEATURE: (A) NAME/KEY: Modified-site (B) LOCATION: 21 (D) OTHER INFORMATION: /note= "	Thr Gln Phe Gly Gly Ile Ser Ile Xaa Glu Ile 15 Xaa Val Ile Val Xaa Xaa Ile Glu Xaa Ile Leu 25 30 Gly Gly Cys Gly Glu Thr Tyr Gln Ser Arg Val 40 40 45 His Pro His Leu Pro Arg Ala Leu Met Arg Ser 50 55 Thr Lys Cys (2) INFORMATION FOR SEQ ID NO:20: (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 60 amino acids (B) TYPE: amino acid (D) TOPOLOGY: linear (ii) MOLECULE TYPE: peptide (ix) FEATURE: (A) NAME/KEY: Modified-site (B) LOCATION: 18 (D) OTHER INFORMATION: /note= "Ser (ix) FEATURE: (A) NAME/KEY: Modified-site (B) LOCATION: 21 (D) OTHER INFORMATION: /note= "Lys (ix) FEATURE: (A) NAME/KEY: Modified-site (B) LOCATION: 22 (D) OTHER INFORMATION: /note= "Gly (ix) FEATURE: (A) NAME/KEY: Modified-site (B) LOCATION: 22 (D) OTHER INFORMATION: /note= "Gly (ix) FEATURE: (A) NAME/KEY: Modified-site (B) LOCATION: 22 (D) OTHER INFORMATION: /note= "Gly	Thr Gln Phe Gly Gly Ile Ser Ile Xaa Glu Ile Xaa 15 20 Xaa Val Ile Val Xaa Xaa Ile Glu Xaa Ile Leu Phe 25 30 35 Gly Gly Cys Gly Glu Thr Tyr Gln Ser Arg Val Thr 40 45 His Pro His Leu Pro Arg Ala Leu Met Arg Ser Thr 50 55 Thr Lys Cys (2) INFORMATION FOR SEQ ID NO:20: (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 60 amino acids (B) TYPE: amino acid (D) TOPOLOGY: linear (ii) MOLECULE TYPE: peptide (ix) FEATURE: (A) NAME/KEY: Modified-site (B) LOCATION: 18 (D) OTHER INFORMATION: /note= "Ser or or or other information: /note= "Lys or or other information: /note= "Lys or or other information: /note= "Lys or or other information: /note= "Gly or oth

(B) LOCATION: 26

	(D) OTHER INFORMATION: /note= "His or Thr"
•	<pre>(ix) FEATURE: (A) NAME/KEY: Modified-site (B) LOCATION: 27 (D) OTHER INFORMATION: /note= "Lys or Arg"</pre>
5	<pre>(ix) FEATURE: (A) NAME/KEY: Modified-site (B) LOCATION: 30 (D) OTHER INFORMATION: /note= "Gly or Thr"</pre>
10	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:20:
	Thr Ile Asn Lys Pro Lys Gly Tyr Val Gly Lys Glu 1 5 10
•	Gly Gly Ile Ser Ile Xaa Glu Ile Xaa Xaa Val Ile 15 20
15	Val Xaa Xaa Ile Glu Xaa Ile Leu Phe Gly Gly Cys 25 30 35
	Gly Glu Thr Tyr Gln Ser Arg Val Thr His Pro His 40 45
20	Leu Pro Arg Ala Leu Met Arg Ser Thr Thr Lys Cys 50 55 60
	(2) INFORMATION FOR SEQ ID NO:21:
25	(i) SEQUENCE CHARACTERISTICS:(A) LENGTH: 42 amino acids(B) TYPE: amino acid(D) TOPOLOGY: linear
30	<pre>(ii) MOLECULE TYPE: peptide (ix) FEATURE:</pre>
	(A) NAME/KEY: Modified-site(B) LOCATION: 1(D) OTHER INFORMATION: /note= "Ile, Met or Leu"
	(D) OTHER INFORMATION. / Hote- 110, 130 of 100

		(ix) FEATURE:
0		(A) NAME/KEY: Modified-site
•		(B) LOCATION: 2
		(D) OTHER INFORMATION: /note= "Ser or Thr"
	•	
	ø	(ix) FEATURE:
		(A) NAME/KEY: Modified-site
5		(B) LOCATION: 5
		(D) OTHER INFORMATION: /note= "Lys or Arg"
		(ix) FEATURE:
		(A) NAME/KEY: Modified-site
10		(B) LOCATION: 6
10		(D) OTHER INFORMATION: /note= "Gly or Thr"
		(ix) FEATURE:
		(A) NAME/KEY: Modified-site
		(B) LOCATION: 10
15		(D) OTHER INFORMATION: /note= "His or Thr"
		(ix) FEATURE:
		(A) NAME/KEY: Modified-site
		(B) LOCATION: 11
20		(D) OTHER INFORMATION: /note= "Lys or Arg"
		(ix) FEATURE:
		(A) NAME/KEY: Modified-site
		(B) LOCATION: 12
25		(D) OTHER INFORMATION: /note= "Ile, Met or Leu"
25		
	•	(ix) FEATURE:
•		(A) NAME/KEY: Modified-site
		(B) LOCATION: 14
		(D) OTHER INFORMATION: /note= "Gly or Thr"
30		
		(ix) FEATURE:
		(A) NAME/KEY: Modified-site
		(B) LOCATION: 15
		(D) OTHER INFORMATION: /note= "Ile, Met or Val"

	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:21:
۰	Xaa Xaa Glu Ile Xaa Xaa Val Ile Val Xaa Xaa Xaa
	1 5 10
	Glu Xaa Xaa Gly Gly Cys Gly Glu Thr Tyr Gln Ser 15 20
5	Arg Val Thr His Pro His Leu Pro Arg Ala Leu Met 25 30 35
	Arg Ser Thr Thr Lys Cys 40
10	(2) INFORMATION FOR SEQ ID NO:22:
	(i) SEQUENCE CHARACTERISTICS:
	(A) LENGTH: 60 amino acids
	(B) TYPE: amino acid
	(D) TOPOLOGY: linear
15	
	(ii) MOLECULE TYPE: peptide
	(ix) FEATURE:
	(A) NAME/KEY: Modified-site
20	(B) LOCATION: 19
	(D) OTHER INFORMATION: /note= "Ile, Met or Leu
	(ix) FEATURE:
	(A) NAME/KEY: Modified-site
	(B) LOCATION: 20
25	(D) OTHER INFORMATION: /note= "Ser or Thr"
	(ix) FEATURE:
	(A) NAME/KEY: Modified-site
	(B) LOCATION: 23
30	(D) OTHER INFORMATION: /note= "Lys or Arg"
	(ix) FEATURE:
	(A) NAME/KEY: Modified-site
	(B) LOCATION: 24
35	(D) OTHER INFORMATION: /note= "Gly or Thr"

0	(ix) FEATURE:
	(A) NAME/KEY: Modified-site
	(B) LOCATION: 28
	(D) OTHER INFORMATION: /note= "His or Thr"
	(ix) FEATURE:
5	(A) NAME/KEY: Modified-site
	(B) LOCATION: 29
	(D) OTHER INFORMATION: /note= "Lys or Arg"
	(ix) FEATURE:
10	(A) NAME/KEY: Modified-site
10	(B) LOCATION: 30
	(D) OTHER INFORMATION: /note= "Ile, Met or Leu"
	(ix) FEATURE:
15	(A) NAME/KEY: Modified-site
	(B) LOCATION: 32
	(D) OTHER INFORMATION: /note= "Gly or Thr"
	(ix) FEATURE:
20	(A) NAME/KEY: Modified-site
	(B) LOCATION: 33
	(D) OTHER INFORMATION: /note= "Ile, Met or Val"
	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:22:
25	Thr Ala Lys Ser Lys Lys Phe Pro Ser Tyr Thr Ala
	1 5 10
•	Thr Tyr Gln Phe Gly Gly Xaa Xaa Glu Ile Xaa Xaa
	15 20
	Val Ile Val Xaa Xaa Kaa Glu Xaa Xaa Gly Gly Cys
30	25 30 35
	Gly Glu Thr Tyr Gln Ser Arg Val Thr His Pro His
	40 45
	Leu Pro Arg Ala Leu Met Arg Ser Thr Thr Lys Cys
	50 55 60
25	

0	(2) INFORMATION FOR SEQ ID NO:23:
5	(i) SEQUENCE CHARACTERISTICS:(A) LENGTH: 56 amino acids(B) TYPE: amino acid(D) TOPOLOGY: linear
J	(ii) MOLECULE TYPE: peptide
	(ix) FEATURE:
	(A) NAME/KEY: Modified-site
10	(B) LOCATION: 15
	D) OTHER INFORMATION: /note= "Ile, Met or Leu"
	(ix) FEATURE:
	(A) NAME/KEY: Modified-site
	(B) LOCATION: 16
15	(D) OTHER INFORMATION: /note= "Ser or Thr"
	(ix) FEATURE:
	(A) NAME/KEY: Modified-site
	(B) LOCATION: 19
20	(D) OTHER INFORMATION: /note= "Lys or Arg"
	(ix) FEATURE:
	(A) NAME/KEY: Modified-site
	(B) LOCATION: 20
25	(D) OTHER INFORMATION: /note= "Gly or Thr"
25	
	(ix) FEATURE:
	(A) NAME/KEY: Modified-site
	(B) LOCATION: 24
20	(D) OTHER INFORMATION: /note= "His or Thr"
30	(ix) FEATURE:
	(1x) FEATURE: (A) NAME/KEY: Modified-site
	(B) LOCATION: 25
	(D) OTHER INFORMATION: /note= "Lys or Arg"

	(ix) FEATURE:
۰	(A) NAME/KEY: Modified-site
•	(B) LOCATION: 26
	(D) OTHER INFORMATION: /note= "Ile, Met or Leu"
	(ix) FEATURE:
	(A) NAME/KEY: Modified-site
5	(B) LOCATION: 28
	(D) OTHER INFORMATION: /note= "Gly or Thr"
	(ix) FEATURE:
	(A) NAME/KEY: Modified-site
10	(B) LOCATION: 29
	(D) OTHER INFORMATION: /note= "Ile, Met, or Val"
	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:23:
	(MI) OBGOLINGE DESCRIBERS
	Thr Ile Asn Lys Pro Lys Gly Tyr Val Gly Lys Glu
15	1 5 10
	Gly Gly Xaa Xaa Glu Ile Xaa Xaa Val Ile Val Xaa
	15 20
	Xaa Xaa Glu Xaa Xaa Gly Gly Cys Gly Glu Thr Tyr 25 30 35
	Gln Ser Arg Val Thr His Pro His Leu Pro Arg Ala
20	40 45
	Leu Met Arg Ser Thr Thr Lys Cys
	50 . 55
	(2) INFORMATION FOR SEQ ID NO:24:
25	
	(i) SEQUENCE CHARACTERISTICS:
•	(A) LENGTH: 46 amino acids
	(B) TYPE: amino acid
•	(D) TOPOLOGY: linear
30	(ii) MOLECULE TYPE: peptide
	(ix) FEATURE:
	(A) NAME/KEY: Modified-site
	(B) LOCATION: 4

		(D) (OTHER	INF	ORMA	MOITA	l: /r	note=	"Se	er or	Thr"
0	(ix)	FEAT	rure:								
			NAME/I	KEY:	Mod	lifie	d-si	ite			
			LOCAT								
						ATION	1: /r	note=	· "Ly	s or	Arg"
5	(ix)	FEAT	rure:								
		(A)	NAME/I	KEY:	Mod	difie	d-si	ite			
		(B) I	LOCAT	ION:	8						
		(D) (OTHER	INF	ORMA	ATION	i: /r	note=	= "G]	y or	Thr"
10	(ix)	FEA:									
10		(A)	NAME/	KEY:	Mod	difie	d-si	ite			
		• •	LOCAT								
		(D) (OTHER	INF	ORMA	MOITA	I: /r	note=	= "Hi	S 01	Thr"
	(ix)		rure:								
15		• •	NAME/			difie	d-si	ite			
		• •	LOCAT								
		(D) (OTHER	INF	ORMA	MOITA	I: /r	note=	· "Ly	/S 01	Arg"
	(ix)	FEA!									
20			NAME/			difie	ed-s:	ite			
			LOCAT								
		(D) (OTHER	INF	'ORM <i>I</i>	MOITE	1: /1	note=	= "G]	Ly o	Thr"
	(xi)	SEQ	UENCE	DES	CRI	OITS	1: SI	EQ II	NO:	24:	
25	Ile Šei	c Ile	Xaa (Glu	Ile	Xaa	Xaa	Val	Ile	Val	Xaa
	1			5					10		
	Xaa Ile	e Glu	Xaa	Ile	Leu	Phe	Gly	Gly	Cys	Gly	Tyr
		15					20				
30	Gly Ty	c Gln	Ser	Ile		Asp	His	Pro	Asp		Pro
	25				30					35	
	Lys Pro	o Ile	Val .	Arg	Ser	Ile	Thr		Cys		
			40					45			

	(2)	INFORMA	TION FOR	SEQ ID	NO:25:		
۰	-	(A)	UENCE CHALLENGTH: TYPE: at	45 amin mino aci	o acids .d		
5		(ii) MO	LECULE T	YPE: pep	otide		
		(xi) SE	QUENCE DI	ESCRIPTI	ON: SEQ	ID NO:2	25:
10	Lys 1	Lys Lys	Ile Ile 5	Thr Ile	Thr Arg	Ile Il	le Thr
10	Ile	Ile Thr	Thr Ile	Asp Gly	Gly Cys 20	Gly T	r Gly
	Tyr 25	Gln Ser	Ile Val	Asp His	Pro Asp		o Lys 85
15	Pro	Ile Val	Arg Ser 40	Ile Thr	Lys Cys 45		
	(2)	INFORMA'	TION FOR	SEQ ID	NO:26:		
20		(A) (B)	UENCE CHALLENGTH: TYPE: ar TOPOLOGY	45 amin mino aci	o acids d		
25		(ii) MO	LECULE TY	(PE: pep	tide		
		(xi) SE(QUENCE DE	ESCRIPTI	ON: SEQ	ID NO:2	:6:
	Lys 1	Lys Lys	Ile Ile 5	Thr Ile	Thr Arg	Ile Il 10	e Thr
30	Ile	Ile Thr 15	Thr Ile	Asp Gly	Gly Cys 20	Gly Gl	u Thr
	Туг 25	Tyr Ser	Arg Val	Thr His	Pro His		o Lys

Asp Ile Val Arg Ser Ile Ala Lys Cys
40
45

- (2) INFORMATION FOR SEQ ID NO:27:
- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 46 amino acids
 - (B) TYPE: amino acid
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: peptide
- 10 (ix) FEATURE:
 - (A) NAME/KEY: Modified-site
 - (B) LOCATION: 1
 - (D) OTHER INFORMATION: /note= "Met or Leu"
- (ix) FEATURE:
 - (A) NAME/KEY: Modified-site
 - (B) LOCATION: 2
 - (D) OTHER INFORMATION: /note= "Thr"
- 20 (ix) FEATURE:
 - (A) NAME/KEY: Modified-site
 - (B) LOCATION: 7
 - (D) OTHER INFORMATION: /note= "Arg"
 - (ix) FEATURE:
- 25 (A) NAME/KEY: Modified-site
 - (B) LOCATION: 8
 - (D) OTHER INFORMATION: /note= "Thr"
 - (ix) FEATURE:
 - (A) NAME/KEY: Modified-site
 - (B) LOCATION: 12
 - (D) OTHER INFORMATION: /note= "Thr"
 - (ix) FEATURE:
 - (A) NAME/KEY: Modified-site

35

•	<pre>(B) LOCATION: 13 (D) OTHER INFORMATION: /note= "Arg"</pre>
-	<pre>(ix) FEATURE: (A) NAME/KEY: Modified-site (B) LOCATION: 14 (D) OTHER INFORMATION: /note= "Met or Leu"</pre>
5	<pre>(ix) FEATURE: (A) NAME/KEY: Modified-site (B) LOCATION: 16</pre>
10	(D) OTHER INFORMATION: /note= "Thr" (ix) FEATURE:
	(A) NAME/KEY: Modified-site (B) LOCATION: 17 (D) OTHER INFORMATION: /note= "Met or Val"
15	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:27:
20	Ile Ser Ile Ser Glu Ile Lys Gly Val Ile Val His 1 5 10 Lys Ile Glu Gly Ile Leu Phe Gly Gly Cys Gly Glu 15 20 Thr Tyr Tyr Ser Arg Val Thr His Pro His Leu Pro
•	25 30 35 Lys Asp Ile Val Arg Ser Ile Ala Lys Cys 40 45
25	(2) INFORMATION FOR SEQ ID NO:28:
30	(i) SEQUENCE CHARACTERISTICS:(A) LENGTH: 49 amino acids(B) TYPE: amino acid(D) TOPOLOGY: linear
35	(ii) MOLECULE TYPE: peptide(xi) SEQUENCE DESCRIPTION: SEQ ID NO:28:

•	Cys 1	Ala	Asp	Ser	Asn 5	Pro	Arg	Gly	Val	Ser 10	Ala	Tyr
		Ser	Arg 15	Pro	Ser	Pro	Phe	Asp 20	Leu	Phe	Ile	Arg
5	Lys 25	Ser	Pro	Thr	Ile	Thr 30	Ser	Leu	Val	Val	Asp 35	Leu
	Ala	Pro	Ser	Lys 40	Gly	Thr	Val	Asn	Leu 45	Thr	Trp	Ser
	Arg	٠										
10	(2)	INFO	ORMAT	rion	FOR	SEQ	ID 1	NO:29	9:			
15		(i)	(A) (B)	LENO TYPE	E CHA GTH: E: an OLOGY	60 a mino	amino acio	ac:				
					LE TY				SEQ :	ID N	D:29	:
20	Gln 1	Gly	His	Thr	Phe 5	Glu	Asp	Ser	Thr	Lys 10	Lys	Cys ·
	Ala	Asp	Ser 15	Asn	Pro	Arg	Gly	Val 20	Ser	Ala	Tyr	Leu
25	Ser 25	Arg	Pro	Ser	Pro	Phe 30	Asp	Leu	Phe	Ile	Arg 35	Lys
	Ser	Pro	Thr	Ile 40	Thr	Ser	Leu	Val	Val 45	Asp	Leu	Ala
	Pro	Ser 50	Lys	Gly	Thr	Val	Asn 55	Leu	Thr	Trp	Ser	Arg 60
30	-	-							_			
	(2)	INF	DRMAT	rion	FOR	SEO	ID	vo: 30):			

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 64 amino acids

(B) TYPE: amino acid (D) TOPOLOGY: linear (ii) MOLECULE TYPE: peptide (xi) SEQUENCE DESCRIPTION: SEQ ID NO:30: 5 Gln Val Thr Tyr Gln Gly His Thr Phe Glu Asp Ser Thr Lys Lys Cys Ala Asp Ser Asn Pro Arg Gly Val Ser Ala Tyr Leu Ser Arg Pro Ser Pro Phe Asp Leu 30 10 Phe Ile Arg Lys Ser Pro Thr Ile Thr Ser Leu Val 45 40 Val Asp Leu Ala Pro Ser Lys Gly Thr Val Asn Leu 55 60 50 Thr Trp Ser Arg 15 (2) INFORMATION FOR SEQ ID NO:31: (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 76 amino acids (B) TYPE: amino acid 20 (D) TOPOLOGY: linear (ii) MOLECULE TYPE: peptide (xi) SEQUENCE DESCRIPTION: SEQ ID NO:31: 25 Gln Lys His Trp Leu Ser Asp Arg Thr Tyr Thr Ser Gln Val Thr Tyr Gln Gly His Thr Phe Glu Asp Ser 15 20 Thr Lys Lys Cys Ala Asp Ser Asn Pro Arg Gly Val 30

30

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Ser Ala Tyr Leu Ser Arg Pro Ser Pro Phe Asp Leu

Phe Ile Arg Lys Ser Pro Thr Ile Thr Ser Leu Val

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۰	Va	l Asp	Leu i	Ala	Pro 65	Ser	Lys	Gly	Thr	Val 70	Asn	Leu
	Th	r Trp	Ser 75	Arg	٠							
	(2) INFO	ORMAT	ION	FOR	SEQ	ID N	10:32	2:			
5		(i)	• •	LENG TYPE	TH: : am	35 a		aci i				-
10		(ii)	MOL	ECUL	E TY	PE:	pept	ide				
		(xi)	SEQ	UENC	E DE	SCRI	PTIC	on: S	SEQ 1	D NO	32:	:
	_	s Ala 1	Asp :	Ser .	Asn 5	Pro	Arg	Gly	Val	Ser 10	Ala	Tyr
15	Le	u Ser	Arg 1	Pro	Ser	Pro	Phe	Asp 20	Leu	Phe	Ile	Arg
	Ly 2	s Ser 5	Pro '	Thr	Ile	Thr 30	Ser	Leu	Val	Val	Asp 35	
20	(2) INFO	ORMAT	ION	FOR	SEQ	ID N	10:33	3:			
		(i)	SEQUI				ERIS					
			(B) '	TYPE	: am	ino	acio	ł				
25			(D) 1	ropo:	LOGY	: li	near					
		(ii)	MOLI	ECUL	E TY	PE:	pept	ide				
		(xi)	SEQ	UENC:	E DE	SCRI	PTIC	N: S	SEQ I	D NC	33:	:
30		n Gly	His '	Thr	Phe 5	Glu	Asp	Ser	Thr	Lys 10	Lys	Cys
	Al	a Asp	Ser i	Asn	Pro	Arg	Gly	Val	Ser	Ala	Tyr	Leu

o	25				Pro Thr	30					Arg 35	Lys
5	(2)		SEQU	JENC! LENC	FOR E CHA GTH: E: an	ARACI	rERIS	STICS ac	S:			
10		-	(D)	TOPO	LE TY	(: li (PE:	inea pept	cide	SEQ I	ID NO	O:34:	:
15	Gln 1	Val	Thr	Tyr	Gln 5	Gly	His	Thr	Phe	Glu 10	Asp	Ser
	Ser		15					20			Gly Asp 35	
20		Ile Asp 50		Lys 40	Ser		Thr	Ile	Thr 45	Ser	Leu	Val
25	(2)		ORMA'	noin	FOR	SEQ	ID I	10:3 ¹	5:			
30			(A) (B) (D)	LENG TYPI	E CHA	62 a mino Y: 1:	amino acio inea	o ac: d r	ids			

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:35:

		(xi)	SE	QUEN	CE DI	ESCR	PTI	: NC	SEQ :	ID NO	35:	•
0	Gln 1	Lys	His	Trp	Leu 5	Ser	Asp	Arg	Thr	Tyr 10	Thr	Ser
	Gln	Val	Thr 15	Tyr	Gln	Gly	His	Thr 20	Phe	Glu	Asp	Ser
5	Thr 25	Lys	Lys	Cys	Ala	Asp 30	Ser	Asn	Pro	Arg	Gly 35	Val
	Ser	Ala	Tyr	Leu 40	Ser	Arg	Pro	Ser	Pro 45	Phe	Asp	Leu
	Phe	Ile 50	Arg	Lys	Ser	Pro	Thr 55	Ile	Thr	Ser	Leu	Val 60
10	Val	Asp										
	(2)	INFO	RMA'	rion	FOR	SEQ	ID I	NO:3	6:			
15		(i)	(A) (B)	LENO TYPI	GTH: E: ar		amino acio					
20						YPE: ESCR		tide ON: S	SEQ	ID N	D:36	:
	Cys 1	Ala	Asp	Ser	Asn 5	Pro	Arg	Gly	Val	Ser 10	Ala	Tyr
25		Ser	15			Pro		Asp 20	Leu	Phe	Ile	Arg
	25	ser	PIO	1111	TTE							
30	(2)	INFO	ORMA'	TION	FOR	SEQ	ID :	NO:3	7:	÷		
		(i)	(A) (B)	LENO TYP	GTH: E: a		amin aci					

•		(ii)	MOI	LECUI	LE TY	PE:	pep	tide				
	-	(xi)	SEÇ	QUENC	CE DE	ESCRI	PTIC	ON: S	SEQ :	ID NO	0:37:	:
	Gln 1	Gly	His	Thr	Phe 5	Glu	Asp	Ser	Thr	Lys 10	Lys	Cys
5	· 	Asp	Ser -15	Asn	Pro	Arg	Gly	Val 20	Ser	Ala	Tyr	Leu
	Ser 25	Arg	Pro	Ser	Pro	Phe 30	Asp	Leu	Phe	Ile	Arg 35	Lys
10	Ser	Pro	Thr	Ile 40								
	(2)	INF	ORMAT	NOI	FOR	SEQ	ID	NO:38	3:			
15		(i)	(A) (B)		STH: E: ar	44 a	amin aci					
20				LECUI				tide ON: S	SEQ :	ID N	D:38	:
	Gln 1	Val	Thr	Tyr	Gln 5	Gly	His	Thr	Phe	Glu 10	Asp	Ser
25		Lys	Lys 15	Cys		Asp	Ser	Asn 20	Pro		Gly	Val
	Ser 25	Ala	Tyr	Leu	Ser	Arg 30	Pro	Ser	Pro	Phe	Asp 35	Leu
	Phe	Ile	Arg	Lys 40	Ser	Pro	Thr	Ile				
30												
	(2)	INF	ORMA'	rion	FOR	SEQ	ID	NO:3	9:			
		(i)	SEQ	UENCI	E CH	ARAC'	TERI	STIC	S:			

(B) TYPE: amino acid (D) TOPOLOGY: linear (ii) MOLECULE TYPE: peptide (xi) SEQUENCE DESCRIPTION: SEQ ID NO:39: 5 Gln Lys His Trp Leu Ser Asp Arg Thr Tyr Thr Ser Gln Val Thr Tyr Gln Gly His Thr Phe Glu Asp Ser 15 Thr Lys Lys Cys Ala Asp Ser Asn Pro Arg Gly Val 30 10 Ser Ala Tyr Leu Ser Arg Pro Ser Pro Phe Asp Leu Phe Ile Arg Lys Ser Pro Thr Ile 55 50 15 (2) INFORMATION FOR SEQ ID NO:40: (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 76 amino acids (B) TYPE: amino acid 20 (D) TOPOLOGY: linear (ii) MOLECULE TYPE: peptide (xi) SEQUENCE DESCRIPTION: SEQ ID NO:40: 25 Gln Lys His Trp Leu Ser Asp Arg Thr Tyr Thr Cys 5 Gln Val Thr Tyr Gln Gly His Thr Phe Glu Asp Ser 20 Thr Lys Lys Cys Ala Asp Ser Asn Pro Arg Gly Val 30 25 30

Ser Ala Tyr Leu Ser Arg Pro Ser Pro Phe Asp Leu

Phe Ile Arg Lys Ser Pro Thr Ile Thr Cys Leu Val

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_	vaı	ASP	Leu	VIG	65	261	БУЗ	Ory	****	70		204
•	Thr	Trp	Ser 75	Arg								
	-	•										
5	(2)	INFO	ORMA	rion	FOR	SEQ	ID 1	10:4	L:			
		(i)	SEQU		E CHA							
			(B)	TYP	E: ar	mino	acio	Ė				
10		(ii)	MOI	LECU	LE T	YPE:	pept	ide				
		(xi)) SE(QUEN	CE DI	ESCRI	IPTI(on: s	SEQ.	ID NO	D:41:	:
	Cys	Lys	Gln	Arg	Asn	Gly	Thr	Leu	Thr	Cys		
15	. 1				5					10		
	(2)	INFO	ORMA	rion	FOR	SEQ	ID 1	NO:42	2:			
		(i)	SEQU									
20					GTH: E: ar				ıds			
			(D)	TOP	OLOG'	Y: 1:	inea	r				
		(ii)	MOI	LECU	LE T	YPE:	pept	cide				
25		(xi) SE(QUEN	CE DI	ESCR	IPTI(он: 3	SEQ :	ID NO	D: 42	:
		Lys	His	Trp	Leu 5	Ser	Asp	Arg	Thr	Tyr 10	Thr	Cys
	1 Gln	Val		Tyr	-	Gly	His		Phe		Asp	Ser
30	Thr	Lys	15 Lys	Cys	Ala	Asp	Ser	20 Asn	Pro	Arg	Gly	Val
	25 Ser	Ala	Tur	Leu	Ser	30 Arg	Pro	Ser	Pro		35	
			- y ~	40					45			

o .	(2)	INFORMATION FOR SEQ ID NO:43:
5		(i) SEQUENCE CHARACTERISTICS:(A) LENGTH: 34 amino acids(B) TYPE: amino acid(D) TOPOLOGY: linear
		(ii) MOLECULE TYPE: peptide
		(xi) SEQUENCE DESCRIPTION: SEQ ID NO:43:
10	1	Pro Ser Lys Gly Thr Val Asn Leu Thr Trp Ser 5 10
		Ala Ser Gly Lys Pro Val Asn His Ser Thr Arg 15 20
15	Lys (Glu Glu Lys Gln Arg Asn Gly Thr Cys 30
	(2)	INFORMATION FOR SEQ ID NO:44:
20		(i) SEQUENCE CHARACTERISTICS:(A) LENGTH: 33 amino acids(B) TYPE: amino acid(D) TOPOLOGY: linear
25		(ii) MOLECULE TYPE: peptide
		(xi) SEQUENCE DESCRIPTION: SEQ ID NO:44:
	Cys 1	Pro Val Gly Thr Arg Asp Trp Ile Glu Gly Glu 5 10
30	Thr	Tyr Gln Cys Arg Val Thr His Pro His Leu Pro 15 20
	Arg	Ala Leu Met Arg Ser Thr Thr Cys

	(2) INFORMATION FOR SEQ ID NO:45:
o	(i) SEQUENCE CHARACTERISTICS:(A) LENGTH: 14 amino acids(B) TYPE: amino acid(D) TOPOLOGY: linear
5	(ii) MOLECULE TYPE: peptide
	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:45:
10	Ser Thr Thr Lys Thr Ser Gly Pro Arg Ala Ala Pro Glu Val 1 5 10
	(2) INFORMATION FOR SEQ ID NO:46:
15	(i) SEQUENCE CHARACTERISTICS:(A) LENGTH: 14 amino acids(B) TYPE: amino acid(D) TOPOLOGY: linear
20	(ii) MOLECULE TYPE: peptide(xi) SEQUENCE DESCRIPTION: SEQ ID NO:46:
	Cys Trp Ser Arg Ala Ser Gly Lys Pro Val Cys Asn His Ser
25	(2) INFORMATION FOR SEQ ID NO:47:
30	(i) SEQUENCE CHARACTERISTICS:(A) LENGTH: 19 amino acids(B) TYPE: amino acid(D) TOPOLOGY: linear
	(ii) MOLECULE TYPE: peptide
	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:47:

•	Cys 1	er Arg Pro Ser Pro Phe Asp Leu Phe Ile Arg	Ī
	Lys	er Pro Thr Ile Thr Cys 15	
5			
	(2)	NFORMATION FOR SEQ ID NO:48:	
10		i) SEQUENCE CHARACTERISTICS:(A) LENGTH: 13 amino acids(B) TYPE: amino acid(D) TOPOLOGY: linear	
		ii) MOLECULE TYPE: peptide	
15		xi) SEQUENCE DESCRIPTION: SEQ ID NO:48:	
	Cys 1	al Gly Thr Arg Asp Trp Ile Glu Gly Glu Pro	Cys
	(2)	NFORMATION FOR SEQ ID NO:49:	
20		i) SEQUENCE CHARACTERISTICS:(A) LENGTH: 15 amino acids(B) TYPE: amino acid(D) TOPOLOGY: linear	
25		ii) MOLECULE TYPE: peptide	
		xi) SEQUENCE DESCRIPTION: SEQ ID NO:49:	
30	Cys 1	Pro Pro Val Gly Thr Arg Asp Trp Ile Glu Gly	•
	Glu	Pro Cys 15	

(2) INFORMATION FOR SEQ ID NO:50:

•	(i) SEQUENCE CHARACTERISTICS:(A) LENGTH: 16 amino acids(B) TYPE: amino acid(D) TOPOLOGY: linear
5	(ii) MOLECULE TYPE: peptide
	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:50:
	Cys Lys Glu Glu Lys Gln Arg Asn Gly Thr Leu Thr 1 5 10
10	Val Thr Ser Cys 15
15	(2) INFORMATION FOR SEQ ID NO:51:
	(i) SEQUENCE CHARACTERISTICS:(A) LENGTH: 8 amino acids(B) TYPE: amino acid(D) TOPOLOGY: linear
20	<pre>(ii) MOLECULE TYPE: peptide (xi) SEQUENCE DESCRIPTION: SEQ ID NO:51:</pre>
25	Lys Glu Glu Lys Gln Arg Asn Gly 1 5
•	(2) INFORMATION FOR SEQ ID NO:52:
30	(i) SEQUENCE CHARACTERISTICS:(A) LENGTH: 11 amino acids(B) TYPE: amino acid(D) TOPOLOGY: linear
	(ii) MOLECULE TYPE: peptide

```
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:52:
        Cys Trp Ser Arg Ala Ser Gly Lys Pro Val Cys
          1
 5
         (2) INFORMATION FOR SEQ ID NO:53:
             (i) SEQUENCE CHARACTERISTICS:
                 (A) LENGTH: 21 amino acids
                 (B) TYPE: amino acid
                 (D) TOPOLOGY: linear
10
             (ii) MOLECULE TYPE: peptide
             (xi) SEQUENCE DESCRIPTION: SEQ ID NO:53:
         Pro Thr Ile Thr Cys Leu Val Leu Asp Leu Ala Pro
15
         Ser Lys Gly Thr Val Asn Leu Thr Cys
                                      20
                  15
20
         (2) INFORMATION FOR SEQ ID NO:54:
             (i) SEQUENCE CHARACTERISTICS:
                 (A) LENGTH: 16 amino acids
                 (B) TYPE: amino acid
25
                 (D) TOPOLOGY: linear
             (ii) MOLECULE TYPE: peptide
             (xi) SEQUENCE DESCRIPTION: SEQ ID NO:54:
30
         Pro Thr Ile Thr Cys Leu Val Leu Asp Leu Ala Pro
                                               10
           1
                           5
         Ser Lys Gly Thr
                  15
```

•	(2) INFORMATION FOR SEQ ID NO:55:
	(i) SEQUENCE CHARACTERISTICS:(A) LENGTH: 25 amino acids(B) TYPE: amino acid(D) TOPOLOGY: linear
. 5	(ii) MOLECULE TYPE: peptide
	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:55:
10	Thr Ser Thr Leu Pro Val Gly Thr Arg Asp Trp Ile
	Glu Gly Glu Thr Tyr Gln Cys Arg Val Thr His Pro
15	His 25
1.5	(2) INFORMATION FOR SEQ ID NO:56:
20	(i) SEQUENCE CHARACTERISTICS:(A) LENGTH: 16 amino acids(B) TYPE: amino acid(D) TOPOLOGY: linear
•	(ii) MOLECULE TYPE: peptide
25	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:56:
	Pro Thr Ile Thr Ser Leu Val Leu Cys Leu Ala Pro
	Ser Lys Gly Cys 15
30	
	(2) INFORMATION FOR SEQ ID NO:57:
	(i) SEQUENCE CHARACTERISTICS:(A) LENGTH: 23 amino acids

(B) TYPE: amino acid (D) TOPOLOGY: linear (ii) MOLECULE TYPE: peptide (xi) SEQUENCE DESCRIPTION: SEQ ID NO:57: Cys Val Asn Leu Thr Trp Ser Arg Ala Ser Gly Lys 5 Pro Val Asn His Ser Thr Arg Lys Glu Glu Cys 20 15 10 (2) INFORMATION FOR SEQ ID NO:58: (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 53 amino acids (B) TYPE: amino acid 15 (D) TOPOLOGY: linear (ii) MOLECULE TYPE: peptide (xi) SEQUENCE DESCRIPTION: SEQ ID NO:58: 20 Cys Thr Trp Ser Arg Ala Ser Gly Lys Pro Val Asn 10 5 1 His Ser Thr Arg Lys Glu Glu Lys Gln Arg Asn Gly 15 Thr Leu Thr Val Thr Ser Thr Leu Pro Val Gly Thr 25 30 Arg Asp Trp Ile Glu Gly Glu Thr Tyr Gln Cys Arg 45 40 Val Thr His Pro His 50 30 (2) INFORMATION FOR SEQ ID NO:59:

(i) SEQUENCE CHARACTERISTICS:

0	(A) LENGTH: 10 amino acids(B) TYPE: amino acid(D) TOPOLOGY: linear
	(ii) MOLECULE TYPE: peptide
F	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:59:
5	Lys Thr Lys Gly Ser Gly Phe Phe Val Phe 1 5 10
10	(2) INFORMATION FOR SEQ ID NO:60:
	(i) SEQUENCE CHARACTERISTICS:
	(A) LENGTH: 19 amino acids (B) TYPE: amino acid
	(D) TOPOLOGY: linear
15	(2) 10101010
	(ii) MOLECULE TYPE: peptide
	(ix) FEATURE:
	(A) NAME/KEY: Modified-site
20	(B) LOCATION: 4
	(D) OTHER INFORMATION: /note= "Ser or Thr"
	(ix) FEATURE:
	(A) NAME/KEY: Modified-site
25	(B) LOCATION: 7
23	(D) OTHER INFORMATION: /note= "Lys or Arg"
	(ix) FEATURE:
	(A) NAME/KEY: Modified-site
30	(B) LOCATION: 8
	(D) OTHER INFORMATION: /note= "Gly or Thr"
	(ix) FEATURE:
	(A) NAME/KEY: Modified-site
35	. (B) LOCATION: 12

	(D) OTHER INFORMATION: /note= "His or Thr
0	<pre>(ix) FEATURE: (A) NAME/KEY: Modified-site</pre>
	(A) NAME/REY: MODIFIED SILE (B) LOCATION: 13
	(D) OTHER INFORMATION: /note= "Lys or Arg
5	(ix) FEATURE:
	(A) NAME/KEY: Modified-site
	(B) LOCATION: 16
	(D) OTHER INFORMATION: /note= "Gly or Thr
10	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:60:
	Ile Ser Ile Xaa Glu Ile Xaa Xaa Val Ile Val Xaa
	1 5 10
	Xaa Ile Glu Xaa Ile Leu Phe
15	15
	(2) INFORMATION FOR SEQ ID NO:61:
	(i) SEQUENCE CHARACTERISTICS:
	(A) LENGTH: 15 amino acids
20	(B) TYPE: amino acid
	(D) TOPOLOGY: linear
	(ii) MOLECULE TYPE: peptide
	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:61:
25	
	Leu Ser Glu Ile Lys Gly Val Ile Val His Arg Leu
	1 5 10
	Glu Gly Val 15
30	
	(2) INFORMATION FOR SEQ ID NO:62:
	(i) SEQUENCE CHARACTERISTICS:
	(A) LENGTH: 20 amino acids
25	(B) TYPE: amino acid

(D) TOPOLOGY: linear (ii) MOLECULE TYPE: peptide (xi) SEQUENCE DESCRIPTION: SEQ ID NO:62: Gly Ile Leu Glu Ser Arg Gly Ile Lys Ala Arg Ile 5 Thr His Val Asp Thr Glu Ser Tyr 20 15 10 (2) INFORMATION FOR SEQ ID NO:63: (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 17 amino acids (B) TYPE: amino acid (D) TOPOLOGY: linear 15 (ii) MOLECULE TYPE: peptide (xi) SEQUENCE DESCRIPTION: SEQ ID NO:63: 20 Lys Lys Gln Tyr Ile Lys Ala Asn Ser Lys Phe Ile 10 1 Gly Ile Thr Glu Leu 15 25 (2) INFORMATION FOR SEQ ID NO:64: (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 22 amino acids (B) TYPE: amino acid 30 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

		(xi)	SEÇ	QUENC	CE DE	ESCRI	PTIC	ON: S	SEQ :	ID NO	64:	
0	Lys 1	Lys	Phe	Asn	Asņ 5	Phe	Thr	Val	Ser	Phe 10	Trp	Leu
		Val	Pro 15	Lys		Ser	Ala	Ser 20	His	Leu		
5	(2)	INFO	RMA	rion	FOR	SEQ	ID 1	NO: 6	5:			
		(i)	SEQ	JENCI	E CHA	ARAC:	CERIS	STIC	s:			
					GTH:				ids			
10					E: ar							
			(D)	101	Э ВОО.			_				
		(ii)	MO1	LECU:	LE T	YPE:	pep	tide				
		(xi)	SEC	OUEN	CE DI	ESCR	IPTI	ON:	SEQ	ID NO	o: 65	:
15												
		Lys	Leu	Arg	Arg 5	Leu	Leu	Tyr	Met	Ile 10	Tyr	Met
	1 Ser	Gly	Leu	Ala	_	Arg	Val	His	Val		Lys	Glu
			15		_	_		20				
20	Glu 25	Gln	Tyr	Tyr	Asp	Tyr 30	·					
	20											
	(2)	INF	^DM/\	T T ON	FOR	SFO	, חד	NO: 6	6:			
	(2)	TME	JKIA	1101	LOK	250	10		•			
25		(i)			E CH							
					GTH: E: a				ıas			
			• •		OLOG							
		(;;	\ MO	ד בירוו	LE T	VDF.	nen	tide				
30		(11) MO	TECO	ו מענ	112.	pep					
		(xi) SE	QUEN	CE D	ESCR	IPTI	ON:	SEQ	ID N	0:66	:
	Tvr	Asp	Pro	Asn	Tvr	Leu	Arq	Thr	Asp	Ser	Asp	Lys
25	1				5		, ,		•	10		
35												

	Asp Arg Phe Leu Gln Thr Met Val Lys Leu Phe Asn 15 20	
0	Arg Ile Lys 25	
	(2) INFORMATION FOR SEQ ID NO:67:	
5	(i) SEQUENCE CHARACTERISTICS:(A) LENGTH: 24 amino acids(B) TYPE: amino acid(D) TOPOLOGY: linear	
10	(ii) MOLECULE TYPE: peptide	
	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:67:	
	Gly Ala Tyr Ala Arg Cys Pro Asn Gly Thr Arg Ala	3
15	Leu Thr Val Ala Glu Leu Arg Gly Asn Ala Glu Leu 15 20	נ
	(2) INFORMATION FOR SEQ ID NO:68:	
20	(i) SEQUENCE CHARACTERISTICS:(A) LENGTH: 15 amino acids(B) TYPE: amino acid(D) TOPOLOGY: linear	
25	(ii) MOLECULE TYPE: peptide	
	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:68:	
20	Phe Phe Leu Leu Thr Arg Ile Leu Thr Ile Pro Gl	n
30	Ser Leu Asp 15	
	(2) INFORMATION FOR SEQ ID NO:69:	

0	(i) SEQUENCE CHARACTERISTICS:(A) LENGTH: 21 amino acids(B) TYPE: amino acid(D) TOPOLOGY: linear
5	(ii) MOLECULE TYPE: peptide
	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:69:
	Val Ser Phe Gly Val Trp Ile Arg Thr Pro Pro Ala 1 5 10
10	Tyr Arg Pro Pro Asn Ala Pro Ile Leu 15 20
	(2) INFORMATION FOR SEQ ID NO:70:
15	(i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 20 amino acids
	(B) TYPE: amino acid(D) TOPOLOGY: linear
20	(ii) MOLECULE TYPE: peptide
	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:70:
	Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp 1 5 10
25	Thr Ala Ser Ala Leu Tyr Arg Glu 15 20
	(2) INFORMATION FOR SEQ ID NO:71:
30	(i) SEQUENCE CHARACTERISTICS:(A) LENGTH: 20 amino acids(B) TYPE: amino acid(D) TOPOLOGY: linear
	(D) IOPOLOGI: IIHeai

	(ii) MOLECULE TYPE: peptide
•	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:71:
	Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys
	1 5 10
5	Trp Gly Glu Leu Met Thr Leu Ala
3	15 20
	(2) INFORMATION FOR SEQ ID NO:72:
10	(i) SEQUENCE CHARACTERISTICS:
10	(A) LENGTH: 17 amino acids
	(B) TYPE: amino acid
	(D) TOPOLOGY: linear
	(ii) MOLECULE TYPE: peptide
15	(-2,
	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:72:
	Trp Val Arg Asp Ile Ile Asp Asp Phe Thr Asn Glu
	1 5 10
20	Ser Ser Gln Lys Thr
	15
	(2) INFORMATION FOR SEQ ID NO:73:
25	(i) SEQUENCE CHARACTERISTICS:
	(A) LENGTH: 19 amino acids
	(B) TYPE: amino acid
	(D) TOPOLOGY: linear
20	(ii) MOLECULE TYPE: peptide
30	(II) Holleold IIII. peptiac
	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:73:
	Arg Ala Gly Arg Ala Ile Leu His Ile Pro Thr Arg
	1 5 10
35	

o	Ile Arg Gln Gly Leu Glu Arg 15
	(2) INFORMATION FOR SEQ ID NO:74:
5	(i) SEQUENCE CHARACTERISTICS:(A) LENGTH: 21 amino acids(B) TYPE: amino acid(D) TOPOLOGY: linear
	(ii) MOLECULE TYPE: peptide
10	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:74:
	Ala Val Ala Glu Gly Thr Asp Arg Val Ile Glu Val
15	Leu Gln Arg Ala Gly Arg Ala Ile Leu 15 20
	(2) INFORMATION FOR SEQ ID NO:75:
20	(i) SEQUENCE CHARACTERISTICS:(A) LENGTH: 25 amino acids(B) TYPE: amino acid(D) TOPOLOGY: linear
25	(ii) MOLECULE TYPE: peptide
	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:75:
•	Ala Leu Asn Ile Trp Asp Arg Phe Asp Val Phe Ser 1 5 10
30	Thr Leu Gly Ala Thr Ser Gly Tyr Leu Lys Gly Asi 15 20
	Ser 25

Glu Ser Cys

(2) INFORMATION FOR SEQ ID NO:76:	
(i) SEQUENCE CHARACTERISTICS:(A) LENGTH: 22 amino acids(B) TYPE: amino acid(D) TOPOLOGY: linear	
(ii) MOLECULE TYPE: peptide	
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:76:	
Asp Ser Glu Thr Ala Asp Asn Leu Glu Lys Thr Va	1
Ala Ala Leu Ser Ile Leu Pro Gly His Gly 15 20	
(2) INFORMATION FOR SEQ ID NO:77:	
(i) SEQUENCE CHARACTERISTICS:(A) LENGTH: 39 amino acids(B) TYPE: amino acid(D) TOPOLOGY: linear	
(ii) MOLECULE TYPE: peptide	
(xi) SEQUENCE DESCRIPTION: SEQ ID NO:77:	
Glu Glu Ile Val Ala Gln Ser Ile Ala Leu Ser Se	r
Leu Met Val Ala Gln Ala Ile Pro Leu Val Gly Gl	.u
Leu Val Asp Ile Gly Phe Ala Ala Thr Asn Phe Va	ıl

- (2) INFORMATION FOR SEQ ID NO:78:
 - (i) SEQUENCE CHARACTERISTICS:

0	(A) LENGTH: 21 amino acids(B) TYPE: amino acid(D) TOPOLOGY: linear
	(ii) MOLECULE TYPE: peptide
5	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:78:
J	Asp Ile Glu Lys Lys Ile Ala Lys Met Glu Lys Ala 1 5 10
	Ser Ser Val Phe Asn Val Val Asn Ser
10	
	(2) INFORMATION FOR SEQ ID NO:79:
	(i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 17 amino acids
15	(B) TYPE: amino acid (D) TOPOLOGY: linear
	(ii) MOLECULE TYPE: peptide
20	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:79:
	Lys Trp Phe Lys Thr Asn Ala Pro Asn Gly Val Asp 1 5 10
25	Glu Lys Ile Arg Ile 15
	(2) INFORMATION FOR SEQ ID NO:80:
30	(i) SEQUENCE CHARACTERISTICS:(A) LENGTH: 14 amino acids(B) TYPE: amino acid(D) TOPOLOGY: linear
35	(ii) MOLECULE TYPE: peptide

•	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:80:
	Gly Leu Gln Gly Lys Ile Ala Asp Ala Val Lys Ala
	Lys Gly
5	(2) INFORMATION FOR SEQ ID NO:81:
10	(i) SEQUENCE CHARACTERISTICS:(A) LENGTH: 19 amino acids(B) TYPE: amino acid(D) TOPOLOGY: linear
	(ii) MOLECULE TYPE: peptide
15	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:81:
	Gly Leu Ala Ala Gly Leu Val Gly Met Ala Ala Asp 1 5 10
	Ala Met Val Glu Asp Val Asn 15
20	(2) INFORMATION FOR SEQ ID NO:82:
	(i) SEQUENCE CHARACTERISTICS:
25	(A) LENGTH: 20 amino acids(B) TYPE: amino acid(D) TOPOLOGY: linear
	(ii) MOLECULE TYPE: peptide
	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:82:
30	Ser Thr Glu Thr Gly Asn Gln His His Tyr Gln Thr 1 5 10
	Arg Val Val Ser Asn Ala Asn Lys 15 20

٥	(2) IN	FORMATION FOR SEQ ID NO. 03.
	(i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 15 amino acids (B) TYPE: amino acid (D) TOPOLOGY: linear
5	(i	i) MOLECULE TYPE: peptide
٠	(x	i) SEQUENCE DESCRIPTION: SEQ ID NO:83:
10	Cys Pr 1	o Ser Pro Phe Asp Leu Phe Ile Arg Lys Ser 5 10
	Pro Th	r Cys 15
15	(2) IN	FORMATION FOR SEQ ID NO:84:
20	(i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 25 amino acids (B) TYPE: amino acid (D) TOPOLOGY: linear
20		i) MOLECULE TYPE: peptide
25		Gly Glu Thr Tyr Lys Ser Thr Val Ser His Pro
	1	5 10
		eu Pro Arg Glu Val Val Arg Ser Ile Ala Lys. 15 20
30	Cys 25	

(2) INFORMATION FOR SEQ ID NO:85:

	(1) SEQUENCE CHARGETERIZETION
	(A) LENGTH: 60 amino acids
•	(B) TYPE: amino acid
	(D) TOPOLOGY: linear
	(ii) MOLECULE TYPE: peptide
	(ix) FEATURE:
5	(A) NAME/KEY: Modified-site
	(B) LOCATION: 18
	(D) OTHER INFORMATION: /note= "Thr"
	(ix) FEATURE:
	(A) NAME/KEY: Modified-site
10	(B) LOCATION: 21
	(D) OTHER INFORMATION: /note= "Arg"
	(ix) FEATURE:
	(A) NAME/KEY: Modified-site
15	(B) LOCATION: 22
13	(D) OTHER INFORMATION: /note= "Thr"
	(b) OTHER INFORMATION. / MOCO III
	(ix) FEATURE:
	(A) NAME/KEY: Modified-site
20	(B) LOCATION: 26
	(D) OTHER INFORMATION: /note= "Thr"
	(ix) FEATURE:
	(A) NAME/KEY: Modified-site
	(B) LOCATION: 27
25	(D) OTHER INFORMATION: /note= "Arg"
	(ix) FEATURE:
·	(A) NAME/KEY: Modified-site
	(B) LOCATION: 30
30	(D) OTHER INFORMATION: /note= "Thr"
	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:85:
	Thr Ile Asn Lys Pro Lys Gly Tyr Val Gly Lys Glu
35	1 5 10
J.J	

0	Gly Gly Ile Ser Ile Ser Glu Ile Lys Gly Val Ile 15 20
	Val His Lys Ile Glu Gly Ile Leu Phe Gly Gly Cys 25 30 35
	Gly Gly Thr Tyr Gln Ser Arg Val Thr His Pro His 40 45
5	Leu Pro Arg Ala Leu Met Arg Ser Thr Thr Lys Cys 50 55 60
	(2) INFORMATION FOR SEQ ID NO:86:
10	(i) SEQUENCE CHARACTERISTICS:(A) LENGTH: 17 amino acids(B) TYPE: amino acid(D) TOPOLOGY: linear
	(ii) MOLECULE TYPE: peptide
15	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:86:
	Lys Trp Phe Lys Thr Asn Ala Pro Asn Gly Val Asp 1 5 10 Glu Lys Ile Arg Ile
20	15
-	(2) INFORMATION FOR SEQ ID NO:87:
25	(i) SEQUENCE CHARACTERISTICS:(A) LENGTH: 62 amino acids(B) TYPE: amino acid(D) TOPOLOGY: linear
	(ii) MOLECULE TYPE: peptide
30	(xi) SEQUENCE DESCRIPTION: SEQ ID NO:87:
	Lys Trp Phe Lys Thr Asn Ala Pro Asn Gly Val Asp
25	Glu Lys Ile Arg Ile Lys Lys Lys Ile Ile Thr 15 20

10

15

20

25

	Thr	Arg	Ile	Ile	Thr	Ile	Ile	Thr	Yhr	Ile 35	Asp
25 Lys	Cys	Gly	Glu 40	Thr		Tyr	Ser	Arg 45	Val	Thr	His
Pro	His 50	Leu		Lys	Asp	Ile 55	Val	Arg	Ser	Ile	Ala 60
Lys	Cys										

(2) INFORMATION FOR SEQ ID NO:88:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 57 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:88:

- (2) INFORMATION FOR SEQ ID NO:89:
 - (i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 19 amino acids

(B) TYPE: amino acid

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

35

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:89: Ile Ser Leu Thr Glu Ile Arg Thr Val Ile Val Thr 10 Arg Leu Glu Thr Val Leu Phe 15 5 (2) INFORMATION FOR SEQ ID NO:90: (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 45 amino acids (B) TYPE: amino acid 10 (D) TOPOLOGY: linear (ii) MOLECULE TYPE: peptide (xi) SEQUENCE DESCRIPTION: SEQ ID NO:90: 15 Ile Ser Leu Thr Glu Ile Arg Thr Val Ile Val Thr 10 5 Arg Leu Glu Thr Val Leu Phe DLys Cys Gly Glu Thr 20 15 Tyr Tyr Ser Arg Val Thr His Pro His Leu Pro Lys 20 35 30 25 Asp Ile Val Arg Ser Ile Ala Lys Cys 40 25 (2) INFORMATION FOR SEQ ID NO:91: (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 63 amino acids (B) TYPE: amino acid (D) TOPOLOGY: linear 30

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:91:

Lys Trp Phe Lys Thr Asn Ala Pro Asn Gly Val Asp

1 5 10

Glu Lys Ile Arg Ile OLys Ile Ser Leu Thr Glu Ile

20

Arg Thr Val Ile Val Thr Arg Leu Glu Thr Val Leu
25 30 35

Phe OLys Cys Gly Glu Thr Tyr Tyr Ser Arg Val Thr
40 45

His Pro His Leu Pro Lys Asp Ile Val Arg Ser Ile
50 55 60